

## OWM INTEGRATED PLANNING TECHNICAL ASSISTANCE

### WORK PLAN CONTRACT EP-C-11-009 FINAL DRAFT – Dec. 18, 2014

Project: Integrated Planning Support for Burlington, Vermont

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## PROJECT SUMMARY

Burlington is a city of approximately 42,000 people next to Lake Champlain, which is impaired by phosphorus. The City has a stormwater Phase II MS4 permit program, is served by a combined sewer in the majority of the community, and operates three wastewater treatment plants (WWTPs). As a result of a new TMDL, the city is currently faced with implementing a 25% reduction in phosphorus loading to the lake from the separate stormwater system, reductions in the phosphorus load from the combined sewer wet weather treatment system (i.e., through volume reductions and vortex physical removal of solids), and attaining effluent phosphorus concentrations of 0.2 mg/L at the three WWTPs. Additional challenges include addressing bacteria impairments and securing funding to support various stormwater and wastewater needs.

This project will support elements of Burlington's integrated wastewater and stormwater planning, which seeks to optimize implementation of projects to meet their various Clean Water Act regulatory obligations as well as general protection of their aquatic ecosystems (e.g., reduction of phosphorus loads to Lake Champlain, address bacteria impairments).

## TECHNICAL APPROACH

### Task 1 – Develop community criteria for comparing and ranking potential projects

Tetra Tech will work with a stakeholder group convened by the city to identify and develop community criteria that will be used in the ranking and comparison of different alternatives for improving the management of stormwater, wastewater, CSOs, and other sources which impact local receiving waters. The stakeholder group may include members of a former stormwater task force, public agency representatives (e.g., planning and zoning), interested citizens, and others identified by the city.

The group will provide an accessible and transparent venue for developing the prioritized/weighted criteria described in Task 1.3. Potential criteria could consider both flows and pollutant loads from sources in the Lake Champlain watershed, net pollutant reductions, and potential costs and social/community impacts – including impacts from potential rate increases.

#### Task 1.1 – Develop a strategy for communicating with and engaging stakeholders to support integrated planning

Tetra Tech will work with the city to adapt current city-sponsored outreach, communication, and public involvement efforts regarding water quality improvement to support activities which 1) educate the public regarding integrated planning, water quality issues, sewer infrastructure challenges, and relevant evaluation parameters (e.g., cost, performance), and 2) collect information from stakeholders regarding their preferences for criteria to be used in evaluating wastewater, stormwater, and other pollution control projects and activities.

Deliverables: Develop stakeholder involvement strategy for integrated planning

#### Task 1.2 – Implement selected tools and approaches for stakeholder engagement

Tetra Tech will assist the city in developing and implementing outreach, communication, and stakeholder involvement tools and approaches identified in Task 1.1. These tools and approaches may include online and/or other approaches, such as outreach and involvement opportunities

targeting interest groups, area towns, and other Lake Champlain urban and rural organizations. The specific tools to be developed will be identified in task 1.1, but Tetra Tech assumes this is the equivalent to the development of 4-5 fact sheets in terms of level of effort.

Deliverables: Selected outreach tools for stakeholder engagement.

#### Task 1.3 – Identify, characterize, and define community criteria for comparing and ranking activities

Working with the city and its stakeholders and partners, Tetra Tech will use the information derived from Tasks 1.1 and 1.2 above to identify, characterize, and define a suite of criteria proposed for use in evaluating and prioritizing activities that address water quality issues. Criteria selected will be based on community/stakeholder input, and may consider cost, performance (i.e., peak flow and pollutant load reduction), community impacts, regulatory requirements, and other factors (e.g., sustainability, weighting, ancillary/tertiary benefits, etc.).

For planning purposes, Tetra Tech assumes that Task 1 will involve one 2.5 day visit to the city, to meet with key stakeholders and community representatives regarding the communication and outreach strategy and proposed criteria for project evaluation. Tetra Tech will assist in agenda preparation, facilitate the meetings, and prepare meeting summaries. Tetra Tech assumes that the logistics associated with the meetings and stakeholder involvement tools (such as online tool coding/deployment, meeting invitations, meeting rooms, any A/V needs, and etc.) will be addressed by the city.

Deliverables: Report on selected criteria for comparing and ranking activities that address water quality issues. Meeting materials (e.g., agenda, summary reports).

### Task 2 – Develop evaluations for conceptual projects that demonstrate an integrated approach to wastewater and stormwater planning

The city is currently faced with multiple regulatory and other requirements that will involve a variety of infrastructure, policy, and land management solutions. Tetra Tech will work with the city to evaluate various water quality improvement alternatives and develop examples of the types of projects that would rank high based on the community criteria developed in Task 1.

#### Task 2.1 – Identify potential water quality improvement alternatives

Tetra Tech will work with the city and its stakeholders to identify various conceptual project examples that address water quality issues in the area. Conceptual examples of targeted/priority water quality improvement activities might include, among other examples, the following:

- Ranking of projects currently planned/proposed as part of the *Flow Restoration Plans for Stormwater Impaired Waters*
- Clustered retrofit projects designed to reduce stormwater flows in combined sewer areas
- A green street project in an areas served by combined sewer systems and currently experiencing basement sewer backups
- Broad, planning level overviews of how many acres might need to be “greened” to significantly reduce the frequency of wet weather CSOs at wastewater treatment plants, and to enable the city to evaluate the efficacy of additional combined vs separate storm sewer projects
- An evaluation of water quality trading with the agricultural sector to reduce phosphorus inputs into Lake Champlain

- Planning level overviews of the extent and type of stormwater controls needed in separate storm sewer drainage areas to achieve the levels of phosphorus load reductions consistent with TMDL WLAs currently being developed
- Evaluating the benefits of WWTP phosphorus removal optimization efforts or structural upgrades vs cost
- Examining non-structural phosphorus reduction opportunities and feasibility in the separate storm sewer area, such as documentable reductions associated with catch basin cleaning, street sweeping, and other activities
- Examining the cost, feasibility, and potential benefits other options, such as sewer separation, sewer/stormwater collection system upgrades, pipe lining, outfall repair, etc.

Deliverable: Final list of potential project concepts to evaluate; priority matrix of water quality implementation opportunities and relevant criteria developed in Task 1.

#### Task 2.2 – Evaluate conceptual projects based on Task 1 criteria

Tetra Tech will use the stakeholder-derived criteria developed in Task 1 to characterize and evaluate a selected set of conceptual projects identified in Task 2.1. The conceptual projects will be analyzed at the planning/scoping level; i.e., general information on cost, scalability, performance, and other community selected criteria will be provided, along with conceptual drawings/graphics, and other information where needed. The overall intent of this subtask will be to provide the city with a broad framework for prioritizing potential water quality improvement projects for more detailed study, based on criteria that address regulatory requirements, cost, performance, and other factors identified in Task 1.

For planning purposes, Tetra Tech assumes that six to eight of the conceptual projects listed in Task 2.1 will be described, characterized, and evaluated. The examples identified will be analyzed at a planning/scoping level of detail; i.e., no detailed engineering design, modeling, or advanced technical analysis is anticipated. In addition, Tetra Tech assumes that Task 2 will involve one 2.5 day visit to the city, to finalize potential project evaluations (it is possible this may be two shorter trips, or two staff coming for 1.5 days depending on need). Tetra Tech will provide a summary report for each of the selected evaluations for use by the city and its partners in public education, outreach, and other programs.

Deliverable: Six to eight conceptual project evaluations related to integrated planning that address water quality issues in the area, and information on how relevant criteria were used to evaluate the conceptual project examples (e.g., cost ranges, pollutant reduction potential, feasibility, scalability, public acceptance, etc.).

#### Task 3 – Produce a report for EPA on using community derived evaluation criteria to identify and prioritize potential wastewater, combined sewer system, and stormwater projects

Tetra Tech will use the outputs of Tasks 1 and 2 to produce a report on how to develop and apply stakeholder derived criteria to evaluate projects and activities that address water quality issues.

##### Task 3.1 – Develop the draft report and submit to EPA for review

Tetra Tech will produce an initial draft of the report on using stakeholder criteria for evaluating stormwater, combined sewer system related and wastewater projects and submit to EPA WAM for

comments. Tetra Tech assumes that EPA WAM will provide one set of combined comments from all stakeholders.

### Task 3.2 – Produce the final report

Tetra Tech will incorporate comments from the review markup into a final draft of the report. After a cursory final review by EPA, Tetra Tech will produce a 508-compliant PDF for website posting.

Deliverables: Draft and final reports

## SCHEDULE AND DELIVERABLES

Deliverable Description	Lead	Deliverable Date
Task 1 – Develop community criteria for comparing and ranking potential projects		
Task 1.1 – Develop a strategy for outreach, communication, and stakeholder involvement		
Develop involvement strategy	Tetra Tech	February 2015
Task 1.2 – Implement stakeholder involvement strategy and review potential criteria		
Implement involvement strategy	Tetra Tech, City	April 2015
Task 1.3 – Identify, characterize, and define community criteria for comparing and ranking activities		
Identify draft evaluation criteria	Tetra Tech	May 2015
Refine final criteria list	Tetra Tech, City	June 2015
Characterize/prioritize criteria	Tetra Tech	July 2015
Task 2 – Develop evaluations for conceptual projects that demonstrate an integrated planning approach		
Task 2.1 – Identify potential conceptual project examples that address water quality issues		
Identify potential project concepts	Tetra Tech, City	August 2015
Select concepts to be evaluated	Tetra Tech, City	August 2015
Task 2.2 – Develop, characterize, and evaluate conceptual projects		
Refine project concepts	Tetra Tech	August 2015
Characterize and evaluate projects	Tetra Tech	September 2015
Develop project summaries	Tetra Tech	October 2015
Task 3 – Develop a report on how to engage stakeholders in stormwater and wastewater planning		
Task 3.1 – Produce the draft report and submit to EPA for review		
Draft report	Tetra Tech	October 2015
Report review and comment	EPA	Early November 2015
Task 3.2 – Incorporate EPA comments from the review markup into a final report		
Final report	Tetra Tech	Early December 2015